



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,500	06/26/2003	Shinichiro Hataoka	5077-000172	5212
27572	7590	09/09/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			TRAN, THUY V	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

08

Office Action Summary	Application No. 10/606,500	Applicant(s) HATAOKA ET AL.	
	Examiner Thuy V. Tran	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15-20 and 22 is/are rejected.
- 7) ☒ Claim(s) 13, 14 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/26/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the Applicants' filing on June 26th, 2003. In virtue of this filing, claims 1-22 are currently presented in the instant application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings Objections

3. The drawings are objected to because (1) Figs. 1 and 2A-B are not labeled correctly, and (2) reference numeral [42] in Fig. 17 is incorrect (in light of the specification, it should be changed to --40--).

4. Figures 1 and 2A-2B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header

Art Unit: 2821

(as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Abstract Objection

5. The abstract of the disclosure is objected to because it contains the word "means" therein.

Correction is required. See MPEP § 608.01(b).

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections/ Minor Informalities

7. Claims 1, 6-8, 10-11, 16-17, and 19 are objected to because of the following informalities:

Claim 1, line 6, --at least-- should be inserted between "the" and "one";

Claim 1, line 8, "at part" should be changed to --in a portion--; and --at least in a portion of each of-- should be inserted between "and" and "the";

Claim 6, line 2, "wire" should be changed to --wires--;

Claim 6, line 3, "is provided in a portion of" should be changed to --is connected to--;

Claim 6, line 4, "wire" (second occurrence) should be changed to --wires--;

Claim 6, line 5, "wire" should be changed to --wires--;

Art Unit: 2821

Claim 7, line 4, --each of-- should be inserted between “in” and “the” (second occurrence); and “portion” should be changed to --portions--;

Claim 8, line 2, “the” should be changed to --a--;

Claim 10, line 4, “the” should be changed to --a--;

Claim 10, line 7, “at part” should be changed to --in a portion--; and --at least in a portion of each of-- should be inserted between “and” and “the”;

Claim 11, line 6, “at part” should be changed to --in a portion--;

Claim 11, line 7, --at least in a portion of each of-- should be inserted between “and” and “the”;

Claim 16, line 8, --at least-- should be inserted between “the” (first occurrence) and “one”;

Claim 16, line 10, “at part” should be changed to --in a portion--; and --at least in a portion of each of-- should be inserted between “and” and “the”;

Claim 17, line 8, --at least-- should be inserted between “the” (first occurrence) and “one”;

Claim 19, line 8, “at part” should be changed to --in a portion--; and

Claim 19, line 9, --at least in a portion of each of-- should be inserted between “and” and “the”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2821

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-12, 15-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art Fig. 2A (AAPA) in view of Tomoyoshi (JP-2001266797 A).

With respect to claim 1, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb, and a pair of sealing portions [2] that retain air tightness of the luminous bulb, wherein each of the sealing portions has a first glass portion [8] extending from the luminous bulb and a second glass portion [7] provided in a portion inside the first glass portion, and a portion [20] to which a compressive stress is applied. AAPA Fig. 2A does not show a heating wire provided at least in a portion of the luminous bulb and at least in a portion of each of the pair of sealing portions.

Tomoyoshi discloses, in Fig. 1, a high-pressure mercury lamp comprising a heating wire [11, 12] in a portion of a luminous bulb [3] and in a portion of each of the pair of sealing portions [4, 5].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by additionally configuring a heating wire in a portion of the luminous bulb and in a portion of each of the pair of sealing portions for heating up the outer surface of the lamp including the emission portion of the discharge container to a high temperature so as to be able to make the mercury therein fully steam and thus to prevent the generation of the glow discharge at the time of the lamp start-up since such an arrangement of

Art Unit: 2821

the heating wire for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see translation; paragraph [0007], lines 3-9).

With respect to claim 2, AAPA Fig. 2A shows a high-pressure mercury lamp wherein an amount of the enclosed mercury [6] is 230 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4).

With respect to claim 3, the combination of AAPA Fig. 2A and Tomoyoshi further disclose, in addition to the claimed limitations already addressed in claim 1, (1) an amount of the enclosed mercury is 300 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4), (2) halogen is enclosed in the luminous bulb, and (3) the heating wire is means for heating the luminous bulb (see Tomoyoshi's Abstract, lines 7-9), but do not teach that a bulb wall load of the high pressure mercury lamp is 80 W/cm² or more. However, this difference is not of patentable merits since it involves only with the size or wall surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure, and furthermore, such a claimed wall loading has been a well-known design in the art (see prior art of record to Dobruskin et al., U.S. Patent No. 4,647,814). Therefore, to modify the combination of AAPA Fig. 2A and Tomoyoshi by adjusting the size or wall surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure to obtain a wall load of 80 W/cm² as claimed to facilitate the evaporation of the enclosed mercury would have been deemed as an obvious development to a person skilled in the art of electric lamp.

With respect to claim 4, the combination of AAPA Fig. 2A and Tomoyoshi disclose that the heating wire [11, 12] is wound around the sealing portions (see Fig. 1 of Tomoyoshi).

With respect to claim 5, the combination of AAPA Fig. 2A and Tomoyoshi disclose that (1) external lead wires [5] are extending from end portions of the pair of sealing portions, and (2) one end of the heating wire [11, 12] is electrically connected to the external lead wires [5] (combination of Fig. 1 of Tomoyoshi and AAPA Fig. 2A).

With respect to claim 6, the combination of AAPA Fig. 2A and Tomoyoshi disclose that (1) a switch [MC] (see Fig. 1 of Tomoyoshi) for turning ON and OFF an electrical connection with the external lead wires [5] is connected to the heating wire [11, 12] (combination of Fig. 1 of Tomoyoshi and AAPA Fig. 2A), and (2) the heating wire [11, 12] is electrically connected to the external lead wires [5] before operation, and after operation, the electrical connection with the external lead wires [5] is disconnected, and the heating wire [11, 12] is electrically connected to a power source [D] for supplying current to the heating wire [11, 12] (combination of Fig. 1 of Tomoyoshi and AAPA Fig. 2A).

With respect to claim 7, the combination of AAPA Fig. 2A and Tomoyoshi disclose (1) a pair of electrode rods [3] are opposed to each other in the luminous bulb, (2) the pair of electrode rods [3] are connected to a metal foil [4], and (3) the metal foil [4] is provided in each of the sealing portions [2], and positioned in the second glass portion [7].

With respect to claim 8, the combination of AAPA Fig. 2A and Tomoyoshi disclose a coil [12] with at least on its surface is wound around at least in a portion of the electrode rod [3] that is buried the sealing portions, but do not specify that the coil has at least a metal selected from a group consisting of Pt, Ir, Rh, Ru, and Re. However, this difference is not of patentable

Art Unit: 2821

merits since such kinds of materials including Pt, Ir, Rh, Ru, and Re have been commonly employed to wind around the electrodes in high-pressure discharge lamps for their relatively high electric resistance and low thermal conductivity, and as such, bulb glass cracks due to heat can be avoided. For these reasons, to employ a metal selected from a group consisting of Pt, Ir, Rh, Ru, and Re for the coil [12] of the combination of AAPA Fig. 2A and Tomoyoshi to prevent the bulb glass from being cracked due to heat would have been deemed obvious to a person skilled in the art.

With respect to claim 9, the combination of AAPA Fig. 2A and Tomoyoshi disclose (1) a metal portion [4] that is in contact with the second glass portion and supplies power is provided is provided in the sealing portions [2], (2) the compressive stress (in region [20]) is applied in a longitudinal direction of the sealing portions, (3) the first glass portion [8] contains 99 wt% or more of SiO₂, and (4) the second glass portion [7] contains SiO₂ and at least one of 15 wt% or less of Al₂O₃ and 4 wt% or less of B (see lines 21-24 in page 10 of the submitted specification).

With respect to claim 10, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb and a pair of electrode rods [3] are opposed, and a pair of sealing portions [2] extending from the luminous bulb, wherein a coil [12] with at least on its surface is wound around at least in a portion of the electrode rod [3] that is buried the sealing portions. AAPA Fig. 2A does not teach a heating wire provided at least in a portion of the luminous bulb and at least in a portion of each of the pair of sealing portions nor specify that the coil has at least a metal selected from a group consisting of Pt, Ir, Rh, Ru, and Re.

Tomoyoshi discloses, in Fig. 1, a high-pressure mercury lamp comprising a heating wire [11, 12] in a portion of a luminous bulb [3] and in a portion of each of the pair of sealing portions [4, 5].

Tomoyoshi does not teach that the coil has at least a metal selected from a group consisting of Pt, Ir, Rh, Ru, and Re. However, this difference is not of patentable merits since such kinds of materials including Pt, Ir, Rh, Ru, and Re have been commonly employed to wind around the electrodes in high-pressure discharge lamps for their relatively high electric resistance and low thermal conductivity, and as such, bulb glass cracks due to heat can be avoided.

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by additionally configuring a heating wire in a portion of the luminous bulb and in a portion of each of the pair of sealing portions for heating up the outer surface of the lamp including the emission portion of the discharge container to a high temperature so as to be able to make the mercury therein fully steam and thus to prevent the generation of the glow discharge at the time of the lamp start-up since such an arrangement of the heating wire for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see translation; paragraph [0007], lines 3-9). Furthermore, to employ a metal selected from a group consisting of Pt, Ir, Rh, Ru, and Re for the coil [12] of the combination of AAPA Fig. 2A and Tomoyoshi to prevent the bulb glass from being cracked due to heat would have been deemed obvious to a person skilled in the art.

With respect to claim 11, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb, and a pair of sealing portions [2] that retain air tightness of the luminous bulb, wherein an amount of the

Art Unit: 2821

enclosed mercury [6] is 230 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4). AAPA Fig. 2A does not show heating means provided at least in a portion of the luminous bulb and at least in a portion of each of the pair of sealing portions.

Tomoyoshi discloses, in Fig. 1, a high-pressure mercury lamp comprising a heating wire [11, 12] in a portion of a luminous bulb [3] and in a portion of each of the pair of sealing portions [4, 5].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by additionally configuring heating means in a portion of the luminous bulb and in a portion of each of the pair of sealing portions for heating up the outer surface of the lamp including the emission portion of the discharge container to a high temperature so as to be able to make the mercury therein fully steam and thus to prevent the generation of the glow discharge at the time of the lamp start-up since such an arrangement of the heating means for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see translation; paragraph [0007], lines 3-9).

With respect to claim 12, the combination of AAPA Fig. 2A and Tomoyoshi further disclose, in addition to the claimed limitations already addressed in claim 11, (1) the heating means [11, 12] is a heating wire (see Tomoyoshi's Abstract, lines 7-9), (2) an amount of the enclosed mercury is 300 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4), and (3) halogen is enclosed in the luminous bulb, but do not teach that a bulb wall load of the high pressure mercury lamp is 80 W/cm² or more.

However, this difference is not of patentable merits since it involves only with the size or wall

Art Unit: 2821

surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure, and furthermore, such a claimed wall loading has been a well-known design in the art (see prior art of record to Dobrusskin et al., U.S. Patent No. 4,647,814). Therefore, to modify the combination of AAPA Fig. 2A and Tomoyoshi by adjusting the size or wall surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure to obtain a wall load of 80 W/cm² as claimed to facilitate the evaporation of the enclosed mercury would have been deemed as an obvious development to a person skilled in the art of electric lamp.

With respect to claim 15, the combination of AAPA Fig. 2A and Tomoyoshi disclose that the heating means [11, 12] is configured to heat the luminous bulb at the same time as operation is started or after operation is started.

With respect to claim 16, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb, and a pair of sealing portions [2] that retain air tightness of the luminous bulb, wherein each of the sealing portions has a first glass portion [8] extending from the luminous bulb and a second glass portion [7] provided in a portion inside the first glass portion, and a portion [20] to which a compressive stress is applied. AAPA Fig. 2A does not show a lamp unit having a reflecting mirror for reflecting light emitted from the high pressure lamp, and a heating wire provided at least in a portion of the luminous bulb and at least in a portion of each of the pair of sealing portions.

Tomoyoshi discloses, in Figs. 1 and 3, a high-pressure mercury lamp unit comprising a reflecting mirror [21] for reflecting light emitted from a high-pressure lamp [2], and a heating

Art Unit: 2821

wire [11, 12] in a portion of a luminous bulb [3] and in a portion of each of the pair of sealing portions [4, 5].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by (i) additionally configuring a heating wire in a portion of the luminous bulb and in a portion of each of the pair of sealing portions for heating up the outer surface of the lamp including the emission portion of the discharge container to a high temperature so as to be able to make the mercury therein fully steam and thus to prevent the generation of the glow discharge at the time of the lamp start-up, and (ii) including the high-pressure mercury lamp into an unit having a reflecting mirror for reflecting light emitted from the high-pressure mercury lamp upon a particular application or environment of use since such an arrangement of the reflecting mirror and the heating wire for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see Fig. 3; and translation, paragraph [0007], lines 3-9).

With respect to claim 17, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb, and a pair of sealing portions [2] that retain air tightness of the luminous bulb, wherein each of the sealing portions has a first glass portion [8] extending from the luminous bulb and a second glass portion [7] provided in a portion inside the first glass portion, and a portion [20] to which a compressive stress is applied. AAPA Fig. 2A does not show a lamp unit having a reflecting mirror for reflecting light emitted from the high pressure lamp, and a heating wire provided at least at a portion of the reflecting mirror.

Tomoyoshi discloses, in Figs. 1 and 3, a high-pressure mercury lamp unit comprising a reflecting mirror [21] for reflecting light emitted from a high-pressure lamp [2], and a heating wire [11, 12, 15] provided at a portion of the reflecting mirror [21].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by (i) including the high-pressure mercury lamp into an unit having a reflecting mirror for reflecting light emitted from the high-pressure mercury lamp upon a particular application or environment of use, and (ii) additionally configuring a heating wire at a portion of the reflecting mirror so as to be able to electrically communicate with a switching circuit or controller from outside, since such an arrangement of the reflecting mirror and the heating wire for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see Figs. 3 and 5).

With respect to claim 18, AAPA Fig. 2A shows a high-pressure mercury lamp wherein an amount of the enclosed mercury [6] is 230 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4).

With respect to claim 20, the combination of AAPA Fig. 2A and Tomoyoshi further disclose, in addition to the claimed limitations already addressed in claim 17, (1) an amount of the enclosed mercury is 300 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4), and (2) halogen is enclosed in the luminous bulb, but do not teach that a bulb wall load of the high pressure mercury lamp is 80 W/cm² or more. However, this difference is not of patentable merits since it involves only with the size or wall surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure, and furthermore, such a claimed

Art Unit: 2821

wall loading has been a well-known design in the art (see prior art of record to Dobrusskin et al., U.S. Patent No. 4,647,814). Therefore, to modify the combination of AAPA Fig. 2A and Tomoyoshi by adjusting the size or wall surface of the bulb relative to the load capability, or more properly, the amount of mercury per unit of internal volume with respect to the operating pressure to obtain a wall load of 80 W/cm² as claimed to facilitate the evaporation of the enclosed mercury would have been deemed as an obvious development to a person skilled in the art of electric lamp.

With respect to claim 19, AAPA Fig. 2A discloses a high-pressure mercury lamp comprising a luminous bulb [1] in which mercury [6] is enclosed inside the bulb, and a pair of sealing portions [2] that retain air tightness of the luminous bulb, wherein an amount of the enclosed mercury [6] is 230 mg/cm³ or more based on a volume of the luminous bulb (see page 14 of the submitted specification; lines 1-4). AAPA Fig. 2A does not show a lamp unit having a reflecting mirror for reflecting light emitted from the high pressure lamp, and a heating wire provided at least in a portion of the luminous bulb and at least in a portion of each of the pair of sealing portions.

Tomoyoshi discloses, in Figs. 1 and 3, a high-pressure mercury lamp unit comprising a reflecting mirror [21] for reflecting light emitted from a high-pressure lamp [2], and a heating wire [11, 12] in a portion of a luminous bulb [3] and in a portion of each of the pair of sealing portions [4, 5].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the mercury lamp of AAPA Fig. 2A by (i) additionally configuring a heating wire in a portion of the luminous bulb and in a portion of each of the pair of sealing portions for

Art Unit: 2821

heating up the outer surface of the lamp including the emission portion of the discharge container to a high temperature so as to be able to make the mercury therein fully steam and thus to prevent the generation of the glow discharge at the time of the lamp start-up, and (ii) including the high-pressure mercury lamp into a lamp unit having a reflecting mirror for reflecting light emitted from the high-pressure mercury lamp upon a particular application or environment of use since such an arrangement of the reflecting mirror and the heating wire for the stated purpose has been well known in the art as evidenced by the teachings of Tomoyoshi (see Fig. 3; and translation, paragraph [0007], lines 3-9).

With respect to claim 22, the combination of AAPA Fig. 2A and Tomoyoshi disclose that the heating means is a heating wire, and the heating wire serves as a trigger wire.

Allowable Subject Matter

10. Claims 13-14 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior art fails to disclose or fairly suggest:

- A high pressure mercury lamp further comprising means for measuring a temperature of the luminous bulb, in combination with the remaining claimed limitations as called for in claim 13 (claim 14 would be allowable since it is dependent on claim 13); and
- A lamp unit further comprising means for measuring a temperature of the luminous bulb, in combination with the remaining claimed limitations as called for in claim 21.

Citation of relevant prior art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Kaneko et al. (Pub. No.: US 2002/0047611 A) discloses a high pressure discharge lamp.

Prior art Seki et al. (U.S. Patent No. 6,734,628) discloses a high pressure discharge lamp.

Prior art Nishida (U.S. Patent No. 6,693,379) discloses a high pressure discharge lamp.

Prior art Kaneko et al. (U.S. Patent No. 6,232,719) discloses a high pressure discharge lamp.

Prior art Dobrusslin et al. (U.S. Patent No. 4,647,814) discloses a high pressure discharge lamp.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuy V. Tran
Examiner
Art Unit 2821

09/06/2004

A handwritten signature in black ink, appearing to read 'Thuy V. Tran', is written over the printed name and title.